

**UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant(s):	Schasteen et al.	Art Unit	1617
Serial No.:	10/652,745	Examiner:	S. Kantamneni
Filed:	August 29, 2003	Conf. No.	1765
For:	ANTIMICROBIAL COMPOSITIONS		

**DECLARATION OF CHRISTOPHER D. KNIGHT UNDER 37 C.F.R. § 1.132**

I, Christopher D. Knight, declare and state as follows:

1. I have over twenty years of experience in the field of animal health and nutrition. Novus International Inc., a global leader in animal health and nutritional products, currently employs me as Vice-President for Research and Development. My employment by Novus International has been continuous for over sixteen years. Prior to my employment at Novus International Inc., I was employed by Monsanto in their Animal Sciences Division for over five years. My educational background includes a Bachelor of Science degree in Animal science awarded by Cornell University in 1975; a Master of Science degree in Monogastric Nutrition awarded by Purdue University in 1977; and a doctorate degree (i.e., Ph.D.) in Monogastric Nutrition awarded by Purdue University in 1981. I have also published over approximately thirty journal articles or posters at internationally attended meetings, and I am an inventor on three patents. Attached to this Declaration is a copy of my curricula vitae.
2. I have reviewed U.S. Patent Application Publication No. 2004/0175434 ('434 application) entitled "Antimicrobial Compositions." The '434 application has claims directed toward antimicrobial compositions that comprise several organic acid formulations developed at Novus, and presently sold under the trade name ACTIVATE®.
3. Through my position at Novus as Vice-President for Research and Development, I am familiar with and supervised portions of the research and development efforts that resulted in the discovery of several organic acid blends, which are claimed in the '434 application. The focus of this research effort was to improve the cost effectiveness of the formulations, while at the same time improving the antimicrobial activity of the blend of organic acids compared to any individual organic acid comprising the blend. The ACTIVATE® organic acid

formulations (as described in various iterations of the '434 application), in my opinion, meet both of the aforementioned goals.

4. We have research data, that in my opinion, demonstrates surprising and unexpected results for organic acid formulations falling within the scope of the '434 patent claims. As an example, attached to this Declaration is a graph (identified as figure 7) that depicts a synergistic effect for two organic acid formulations of the claimed invention. With reference to the attached graph, data is depicted for the antimicrobial activity of five different organic acid compositions against *Salmonella* in feed. The five organic acid compositions include: (1) 0.45% HMTBA alone (i.e., 2-hydroxy-4-(methylthio)butanoic acid, which is a compound of Formula (I) in the '434 application); (2) 0.45% butyric acid alone; (3) 0.45% lactic acid alone; (4) blend OA 4, which is 0.15% lactic acid, 0.15% propionic acid, and 0.15% HMTBA; and (5) blend OA 6, which is 0.1% lactic acid, 0.1% butyric acid, 0.1% propionic acid, and 0.15% HMTBA. The antimicrobial experiments were conducted in accordance with Novus's standard protocol entitled "Low pH in Feed Test Procedure," a copy of which is attached to this Declaration. As depicted in the graph, the antimicrobial activity of either blend OA 4 or blend OA 6 achieved significantly higher killing of *Salmonella* at lower concentrations than could be achieved with any of the single organic acids alone.
5. I further declare that all statements made herein are of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

  
Christopher D. Knight

  
Date